Annual Report of Operations for Year 2016

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:
WAG130020

Facility & Owner Information

Facility Name:
Keta Creek hatchery Complex

Operator Name (Permittee):
Hugo Hernandez

Address:

Muckleshoot Fish Enhancement
Keta Creek Hatchery
34900 - 212th Ave. S.E.
Auburn, WA 98092

Email: Hugo.Hernandez@muckleshoot.nsn.us Phone: 253-876-3341

Owner Name (if different from operator):
Muckleshoot Indian Tribe

Email: Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ■ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.
The BMP changes describe the upgrades to the facility, treatment systems, and solids control.

IC13 1/25/17 JR

EPA General Permit WAG130000 - Annual Report

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs):	53,331
Pounds of food fed to fish during the maximum month: 5940 lbs	

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Chum Salmon	2,904,621	Crisp	~299 FPP
Coho Salmon	301,169	Crisp	~15 FPP
Coho Salmon	480,222	Elliot Bay Net Pens	~20.4 FPP

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	37425	3,700	July	13,500	3,652
February	18149	1,387	August	18,255	3,784
March	27453	4,125	September	22,364	5,940
April	32,916	3,441	October	29,565	3,916
May	8,692	4,751	November	37968	4,840
June	11,388	1,606	December	44462	4,796

Additional Comments: During the months of February, March, April, and May fish are transferred and released.

Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Juvenile Coho	1/1/16-12/31/16	Upland Disposal
Juvenile Chum	10/30/16-5/5/16	Upland Disposal
Solids collected in the Clarifier	9/1/16	Tribal landfill

Additional Comments:

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
7/1/16-9-11/9/16	Parasitic or bacterial infection of a unknown organism.	Investigation is still in processes.	1882

Additional Comments:

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

The Keta Creek Hatchery Complex was in compliance during the year of 2016.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
Daily	Monthly Maintenance	UV lights were inspected and burnt bulbs were replaced.
Daily	Weekly Maintenance	Required Maintenace
5/23/16	11/21/16	Drum filter 12ME02 motor and Wheel bearing were replaced.

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ☐ No	Azithromycin
☐ Yes ▣ No	Chloramine-T: ***See additional reporting requirements on page 7***
☐ Yes ▬ No	Chlorine
☐ Yes ▬ No	Draxxin
☐ Yes ▬ No	Erythromycin - injectable
☐ Yes ▣ No	Erythromycin - medicated feed
▣ Yes ☐ No	Florfenicol (Aquaflor)
▣ Yes ☐ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ▣ No	Herbicide - describe:
☐ Yes ▣ No	Hormone - describe:
☐ Yes ▣ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
▣ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ▬ No	Oxytetracycline
☐ Yes ▬ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☐ Yes ▣ No	Romet
☐ Yes ▣ No	SLICE (emamectin benzoate)
☐ Yes ▣ No	Sodium Chloride - salt
☐ Yes ▣ No	Vibrio vaccine
☐ Yes ☐ No	Other:
☐ Yes ☐ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Parasite-S		Generic Name: Formalin	
Reason for use: Disinfectent			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units) Ranges	Total quantity of formulated product used in past year (specify units): 437 liters	
Date(s) of treatment: January 2016-December 2016			Total number of treatments in past year: 167
Maximum daily volume of treated water: 300 gallons	Treatment concentration (specify units): .1liters- 1.44 liters	Duration and frequency of treatment(s): Duration was either 10 or 15 min	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: All water used for treatment discharges from a clarifier and mixes hatchery EF water			

Brand Name: Bio-Oregon Feed		Generic Name: AquaFLOR	
Reason for use: Used to treat Cold water disease			
☐ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment: Depends on FPP size	Total quantity of formulated product used in past year (specify units): 704	
Date(s) of treatment: 4/6/16-4/15/16			Total number of treatments in past year: 1
Maximum daily volume of treated water: 1500 GPM	Treatment concentration (specify units): 15 mgs/kg	Duration and frequency of treatment(s): 14 days at 1 feeding a day	
Method of application:	☐ Static Bath ☐ Flow-through	■ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	■ Other (describe): Rearing Circulars
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ☐ Settling basin	☐ Septic System ☐ Publicly owned treatment works	■ Other (describe): Passed through DF
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Water treated with AquaFlor passed through drum filters then into rearing ponds			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments		
Tank Volume	189	Liters
Desired Static Bath Treatment Concentration	100	µg/L
Volume of Product Needed	1.8	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 10 ml/L Active Ingredient: 10% Povidone Iodine	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	6986 Liters per minute	Specify Units
Maximum % of Facility Discharge Treated	.027%	% of Total Discharge

Flow-Through Treatments		
Tank Volume	75.7	Liters
Calculated Flow Rate	2758	Liters/Minute
Duration of Treatment	15	Minutes
Desired Flow-Through Treatment Concentration of Product	160	µg/L
Amount of Product to Add Initially	2.4	Liters Product
Amount of Product to Add During Treatment	40	mL/Minute
Total Volume of Product Needed	2.4	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 2400 ML Active Ingredient: 3.98 PPM	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	728.9 GPM	Specify Units
Maximum % of Facility Discharge Treated	9.8	% of Total Discharge

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.
Hatchery has a significant upgrade to improve production, water, and effluent treatment. Further details are referenced in the BMP.

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Hugo Hernandez	Green River Team Leader
Printed name of person signing	Title
	1/20/2017
Applicant Signature	Date Signed

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Seattle, WA 98101-3140

Date	AMT. USED	Amount of Stacks	Formalin (ML)	Formalin (	Time treated	GPM being treated	Gallons per treatment
1/2/2016	2400	4	160	0.16	15	5	75

Total flow of Stacks	Liters per stack	Keta Effluent flow through Gallons	Liters of effluent per minute
20	75.7082	728.9	2758.23049

PPM Concentration at the Heath tray	PPM in Effluent	Clarifier in liters	Flow leaving clairifier	PPM at Clarifier	Sampler
2113.377415	58.00820511	169900.557	189.2705	3.980538256	BJ